

REMARKS

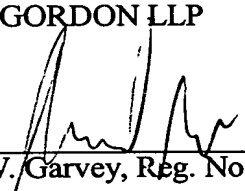
The claims have been amended to make technical corrections.

If there are any fees resulting from this communication, please charge the same to our Deposit Account No. 16-0820, our Order No. 33126.

Respectfully submitted

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By

  
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 1-3 have been cancelled.

Claims 4 and 5-10 have been amended as follows.

1           4. (amended) Device for analyzing an object (2), particularly a radioactive waste package,  
2 that may contain fissile material or fertile material or both, the fissile material [containing]  
3 comprising M fissile isotopes and the fertile material [containing] comprising N fertile isotopes,  
4 where M and N are integer numbers equal to at least 1, this device being characterized in that it  
5 comprises:

6           -means (8, 10) of irradiating the object by a neutron flux consisting of thermal, epithermal  
7 and fast neutrons and resulting from a sequence of initial fast neutron pulses, the thermal  
8 neutrons causing fissions in the fissile material and the epithermal and fast neutrons  
9 causing fissions in the fissile material and in the fertile material,

10           -means (4, 52) of counting neutrons, designed to measure prompt and delayed neutronic  
11 signals emitted by the object after each pulse, and

12           -means (6) of processing the signals thus measured, designed to accumulate these signals  
13 and, after the last pulse, to obtain the sum of all signals, to use this sum to determine the  
14 contribution Sp of the prompt neutrons produced by the thermal fissions and the  
15 contribution Sr of the delayed neutrons produced by the thermal, epithermal and fast  
16 fissions [reactions], and to [use Sp and Sr to] determine the quantity of each of the M+N  
17 isotopes from Sp and Sr and from at least M+N-2 additional items of information related  
18 to the quantities of the M+N isotopes, expressing Sp and Sr as linear combinations of  
19 these quantities, the coefficients of these linear combinations being determined  
20 beforehand by calibration.

1           6. (amended) Device according to claim 5, in which the thermalization means comprises a  
2 containment (10) that includes a central area (12) in which the object (2) will be placed and in  
3 which at least three sides are delimited by a thickness (14, 60) of moderator material, the neutron  
4 source (8) being placed on a fourth side of this containment and the neutron counting means (4,

5 52) being placed on the three sides between the central area and the thickness of [the] moderator  
6 material, a thickness of multiplier material (22, 24, 50) being provided between the central area  
7 and the neutron source and between the central area and the neutron counting means.

1 7. (amended) Device according to claim 6, in which each neutron counting means [may]  
2 is also [be] surrounded by a thickness (26) of neutron poison material.

1 8. (amended) Device according to [either of] claim[s] 6 [and 7], in which each neutron  
2 counting means [may] is also [be] surrounded by a moderator material (28).

1 9. (amended) Device according to [any one of] claim[s] 6 [to 8], also comprising a wall  
2 (36) made of neutron poison and moderator materials that delimits the fourth side of the  
3 containment, the [thickness (22)] corresponding [to] thickness (22) of the multiplier material  
4 being between this wall (36) and the central area (12).

1 10. (amended) Device according to [any one of] claim[s] 6 [to 9], also comprising means  
2 (46, 48, 68, 70, 72) of rotating the object (2) within the central area of the containment.